ENVIRONMENTAL ASSESSMENT

I. PROJECT INFORM ATION

Project Name and Address:	City of Fort Wayne One Main Street Fort Wayne, IN 46802
SRF Project Number:	DW 06 11 02 01
Authorized Representative:	Mr. Greg Meszaros City Council President

II. PROJECT LOCATION

Fort Wayne is located in Allen County, in the Huntertown, Cedarville, Fort Wayne East, Fort Wayne West, Ossian, Arcola and Maples USGS Quadrangles. Figure 1 identifies the proposed project elements.

III. PROJECT PURPOSE AND NEED

Fort Wayne provides potable water to over 200,000 people in the water service area through 71,725 meters. All of the potable water in Fort Wayne is supplied by a low service pumping station on the St. Joe River that was constructed in the 1930s. The water is then treated at the Three Rivers Filtration Plant. The original plant was constructed in the 1930s and major plant expansions occurred in the 1950s and the 1980s. The plant is rated to treat 72 million gallons per day (MGD). There are approximately 920 miles of water main in the city and 997 miles within the service area. There are five elevated storage tanks and two ground storage tanks with a total capacity of 14 million gallons. Fort Wayne is in need of improvements to its water supply, treatment and distribution systems to improve the quality of the water, ease of operation, and to bring the city into compliance with State and Federal regulations.

North Pump Building & Electrical Building Needs: The filtration plant's 20 million gallon underground reservoir, constructed in 1933, is the primary finished water storage facility for the city, but the city does not meet *Ten States Standards* criteria, since only 8 million gallons is useable during normal operations due to high-service pump configuration. This leaves the city without adequate storage in emergencies, and makes daily operations of the plant more difficult. The pumps will be replaced to fully supply the 20-million gallon reservoir.

West Reservoir Storage Need: The filtration plant is the sole source of water to the drinking water distribution system. The city needs to increase useable treated water storage to 30 million gallons, approximately equal to its average day demand. Therefore, the city is seeking SRF funding to design a 10 million gallon reservoir. If the 20 MG reservoir needs repairs or improvements, the city will have the flexibility to make them without service disruption.

St Joe Dam Electrical & Pump Needs: The St Joe dam intake is the only raw water intake for the filtration plant, and the dam's low-service pumps transport the raw water to the Plant. The St. Joe dam uses electrical service from American Electric Power, but has no backup if AEP service fails or becomes unreliable. Pumping and electrical reliability need to be improved.

Filter Building and Raw Lime & Lime Sludge Pump & Pipe Needs: Two thirds of the plant's filters are over 50 years old, and equipment associated with these filters needs replacement or rehabilitation. Currently, lime sludge is withdrawn from the bottom of settling tanks and stored in small wet wells before being pumped to disposal lagoons more than four miles away. Limited storage, pump failures, and reduced pumping capacity make sludge operations difficult when more intensive treatment is needed due to poor water quality the St. Joseph River.

Distribution Needs: The city has approximately 1,000 miles of water mains and has established a program for identifying mains to be replaced and/or upgraded. Main replacements are prioritized based on maintenance records, breaks, customer complaints, age and condition, and fire protection needs. The areas chosen for replacement have low pressure problems, a high break history, and many water quality complaints. One main will be replaced to improve pressure and supply to an existing elevated water tank. The city has established a goal of replacing 30,000 feet of water main every year.

IV. PROJECT DESCRIPTION

New North Pump Building & Electrical Building: To increase supply reliability, the city will construct a new North Pump Building with space for six pumps. Four new vertical turbine pumps rated to pump 14.67 MGD each will be installed as a part of this project; two will have variable frequency drives. The new pumps will be designed to increase the useable volume of the existing reservoir and to enhance the reliability of the plant's high-service pumping. The new pumps would also allow the city to pump from future additional finished water storage facilities at the plant.

St Joe Dam Electrical & Pump Project: Improvements at the St. Joe dam include a new electrical building housing an emergency generator, updates to the electrical system, replacement of two older low-service raw water pumps with two new 36 MGD raw water pumps with variable frequency drives, and improvements to screening and other pumping station components. The generator will be designed to come on-line quickly in emergencies and be able to maintain dam operations for an extended period. With the

replacement of the two older pumps with more reliable ones, the firm capacity of the St. Joe dam will be 140 MGD.

West Reservoir Design Project: This project proposes only the design of a new 10 million gallon storage reservoir; construction is not part of this project. When completed, the West Reservoir will increase the finished water storage capacity to 30 million gallons.

Raw Lime and Lime Sludge Pump & Pipe Improvements: Replacement of the raw lime and lime sludge handling facilities will help improve removal and disposal of lime sludge from the filtration plant. This project will improve conditions at several lime sludge pumping areas in the plant by replacing pumps, adding redundancy to pumping operations, and improving piping and lime sludge draw-off and pumping controls. The project also includes coordination of the raw lime transport facilities within the plant, which currently is inefficient.

Filter Building Valve Improvements: This project will replace valves, actuators and associated control instruments that regulate influent and effluent flow, backwash water and draining operations of various filters. The project will also include replacement or rehabilitation of flow meters, loss-of-head gauges, some influent piping and associated filter equipment.

Distribution Improvement – new lines: The Lake Avenue Feeder Main Project will construct 2,800 feet of new 24- and 16-inch water main to increase the capacity of the core feeder mains that serve the Northeast portion of the city's distribution system. The project would improve the city's ability to provide adequate pressure, as well as improve the recovery of the Northeast Tank during high demand periods.

Distribution Improvements – replacement lines: Water mains will be replaced in the following areas: Indian Village (6 inch main, 6,800 feet; this is Phase 4 of an Indian Village line installation project), Bellmont Addition (6 inch main, 10,150 feet), on Hobson Street between Vance Street and State Boulevard (8 inch main, 2,650 feet), and Colonial Heritage Addition (6 inch main, 8,800 feet). These improvements will address complaints about poor water quality and frequent main breaks.

V. ESTIMATED PROJECT COSTS

A. Selected Plan Estimated Cost Summary

Construction Costs

North Pump Building & Electrical	$13,500,000
St. Joe Dam Electrical & Pump Project	6,000,000
Lime & Sludge Pump & Pipe Improvements	685,000
Filter Building Valve Improvements	2,000,000
Lake Avenue Feeder Main	500,000

Indian Village Phase 4 water line replacement	465,000	
Hobson: Vance to State water line replacement	175,000	
Colonial Heritage Addition water line replacement	475,000	
CONSTRUCTION COST		**$24,375,000**
Non-Construction Costs		
Construction Contingencies	2,751,000	
Legal and Accounting	150,000	
Design Engineering	3,867,900	
Programming	413,490	
Construction Engineering & Management	1,467,670	
Construction Observation	1,034,720	
NON-CONSTRUCTION COST		**$ 9,684,780**
TOTAL PROJECT COST		**$34,059,780**

B. The SRF loan amount is $31,900,000. The remainder of the project cost will be paid for with cash on hand. The city will finance the project with a 20-year term loan from the SRF program at an interest rate to be determined at the time of loan closing. SRF interest rates are adjusted quarterly and will always be equal to or lower than AAA open-market rates. Monthly user rates and charges may need to be analyzed to determine if adjustments are required for loan repayment.

VI. DESCRIPTION OF EVALUATED ALTERNATIVES

No-Action: The "no action" alternative will not address the system needs related to treatment, storage, distribution and power supply reliability. The alternative was rejected.

Optimal Operation of Existing Facilities: This alternative will not alleviate the need for the projects. Currently, the plant is operated as well as it can be. However, the facilities are old and replacements are necessary.

Supply and Treatment: Several options have been considered for source of supply. Currently, the city obtains all of its raw water from the St. Joe River. Other options were considered, including drilling of wells, construction of an intake structure at the filtration plant site, and construction of shore wells at the filtration plant site. These were rejected as infeasible. Construction of a new water plant is not feasible and was also rejected. The existing plant, although old, was constructed to stand the test of time. The oldest portions of the plant and St. Joe dam have been in service for over 70 years. Maintenance has been ongoing at the facilities, and there is no need to abandon the existing plant and construct a new one.

The selected plan includes the supply, storage, treatment, distribution and power supply reliability improvements described in Section IV. The recommended alternatives have

been chosen based on reliability, implementability, and technical capabilities. Monetary considerations were also evaluated, but reliability and operation were the key factors in selection.

VII. ENVIRONMENTAL IMPACTS OF THE FEASIBLE ALTERNATIVES

A. Direct Impacts of Construction

Undisturbed Land: The Indiana Department of Natural Resources' (IDNR) Division of Historic Preservation and Archaeology (DHPA), in correspondence dated July 17, 2006, stated that archaeological reconnaissance level surveys would be required on the locations of the proposed electrical building at the St. Joseph River dam, the North Pump building at the filtration plant, and the proposed reservoir. The surveys have been completed, and no significant archaeological resources were found.

Historic Structures (Figures 2a-2f): The July 17, 2006 DHPA correspondence listed several questions relating to the proposed projects' effects on historic sites. The St. Joe Dam Pumping Station and the Three Rivers Filtration Plant are each Outstanding sites listed in the Allen County Interim Report.

Construction at the St. Joe dam will include a new electrical building, replacement of Low Service Pump No. 3, replacement of screening equipment, and implementing electrical improvements inside the building. None of the proposed work will negatively impact the historical integrity of the structure. The new buildings will be constructed with a limestone façade to complement that on the existing building.

Construction at the Three Rivers Filtration Plant includes the construction of a new North Pump Building and Electrical Building, replacement of lime sludge pumps, replacement of filter valves, and upgrade of the lime facilities electrical system to allow for automated controls. None of the proposed construction will negatively impact the historical integrity of the structure, either on the inside or outside. The new building will be constructed with a limestone façade to complement that on the existing building.

Indian Village has three Notable sites adjacent to the proposed water mains. The existing water mains run through the backyards of the subdivision and will be abandoned in place. The new mains will be installed under the street pavement by directional drilling, a trenchless technology.

The project will not alter the characteristics of historic structures which make them eligible for inclusion on the state or federal registers of historic sites/structures. Audible or visual effects due to project construction will be temporary. The SRF's finding, pursuant to Section 106 of the National Historic Preservation Act, is: "no historic properties affected."

Prime Farmland: The project will not affect prime farmland.

Wetlands and 100-Year Floodway (Figures 3a-3g): The project will affect a wetland and 100-year floodway only at the crossing of Pierson Ditch by the proposed Lake Avenue feeder main. The project will not affect the 100-year floodway, nor Exceptional Use Streams, Outstanding State Resource waters, or Natural, Scenic and Recreational Rivers and Streams.

Groundwater and Drinking Water Supplies: The project will not affect groundwater, a sole source aquifer or drinking water supplies.

Surface Waters: The project will not negatively affect surface waters.

Plants and Animals: The construction and operation of the proposed project will not negatively impact state or federal listed endangered species or their habitat.

Air Quality: The construction and operation of this work will not adversely affect ozone levels and will not increase or decrease airborne pollutants.

Open Space and Recreational Opportunities: The project will not negatively affect open space and recreational opportunities. The existing reservoir at the filtration plant currently has a soccer field on top of it, which will remain during construction and operation of the new North Pump Building. Additional open space will be created with the construction of the new West Reservoir in the future.

B. Indirect Effects

The city's PER states "*The City will ensure through the authority of its Council, planning commission, or other means, that future development, as well as future distribution system or treatment works projects connecting to SRF funded facilities will not adversely impact wetlands, archaeological/historical/structural resources, or other sensitive environmental resources. The City will require new development and treatment works projects to be constructed within the guidelines of the U.S. Fish and Wildlife Service, IDNR, IDEM, and other environmental authorities.*"

C. Comments from Environmental Review Authorities

This is the first notice to the U.S. Fish and Wildlife Service and the IDNR Environmental Unit. The Natural Resources Conservation Service, in correspondence dated April 17, 2006 that the proposed project *will not cause a conversion of prime farmland*.

The DHPA has not yet reviewed the archaeological survey and structural resource material submitted to it on September 5, 2006.

VIII. MITIGATION MEASURES

The city's Preliminary Engineering Report (PER) states:

The project will be designed and implemented to minimize soil erosion and mitigation measures cited in comment letters from governing agencies will be implemented. Erosion control measures including seeding, sodding, inlet protection, silt fence, stone construction entrance and dust control may be implemented in accordance with current soil erosion control practices at the time of construction to reduce/eliminate erosion of the soils.

The projects will be implemented to minimize the impact to non-endangered species and their habitat. Mitigation measures cited in comment letters from the Indiana Department of Natural Resources and the U.S. Fish and Wildlife Service will be implemented.

Short term negative impacts for this construction will include noise and dust during the construction operations. To mitigate construction noises and the subsequent resident complaints, construction will only be allowed from 8:00 am to 5:00 pm Monday through Friday. Appropriate erosion control measures will be implemented during construction to abate dust and airborne dirt particles. The contractor will be required to maintain all equipment in good working order to mitigate noise and air pollution caused by faulty operating equipment. Long term negative impacts will include the noise from the operation of the new pumps and electrical equipment; however, the level of noise is not expected to increase above current level. Malodorous fumes and gases will not be discharged into the air as a result of the construction activities or the operation of the proposed work.

IX. PUBLIC PARTICIPATION

A properly advertised public hearing was held on May 10, 2006 in the Fort Wayne City County Building concerning the proposed project. In addition, the project and rate increase were discussed at the Board of Works and City Council meetings, other public hearings, and at neighborhood meetings throughout the city. A copy of the PER was available for review for 10 days prior to the May 10 public hearing. There were no written comments received from the public during the 10-day period after the public hearing.